Pancreatic cancer

Patients diagnosed 1993-2019
(ICD10: C25)

[Original release: 16th Sept 2021; Updated with minor amendments 12th Nov 2021 - See Amendments document for details]

Further information

Further data is available at: **www.qub.ac.uk/research-centres/nicr**

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Acknowledgements

Incidence

During 2015-2019:

▪ There were 144 male and 122 female cases of pancreatic cancer diagnosed each year.

▪ Pancreatic cancer made up 2.9% of all male, and 2.5% of all female cancers (ex NMSC).

▪ The risk of developing pancreatic cancer before the age of 75 was 1 in 107.9 for men and 1 in 156.2 for women, while before the age of 85 the risk was 1 in 54.1 for men and 1 in 74.0 for women.

Incidence by age at diagnosis *- Pancreatic cancer, Cases in 2015-2019*

During 2015-2019:

▪ The median age at diagnosis was 72 for men and 74 for women.

▪ Cancer risk increased with age, with 41.0% of men and 49.2% of women aged 75 years or more at diagnosis.

▪ 8.6% of cases were diagnosed among those aged under 55.

Age at diagnosis	Average cases per year		
	Male	Female	Both sexes
0 - 54	12	9	23
54 - 64	25	14	39
65 - 74	48	37	85
75 +	59	60	119
All ages	144	122	266
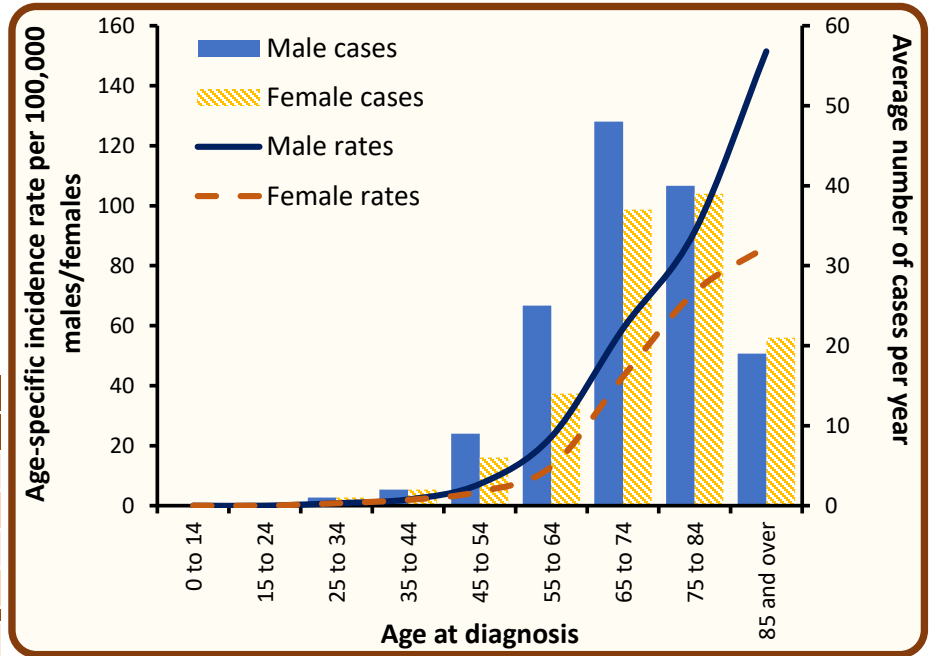
Incidence by year of diagnosis *- Pancreatic cancer, Cases in 1995-2019*

▪ Among males the number of cases of pancreatic cancer increased by 34.6% from an annual average of 107 cases in 2010-2014 to 144 cases in 2015-2019.

▪ Among females the average number of cases of pancreatic cancer each year did not change between 2010-2014 and 2015-2019 with an average of 122 cases diagnosed each year in both five-year periods.

Year of diagnosis	Male	Female	Both sexes
2010	89	105	194
2011	96	118	214
2012	125	129	254
2013	111	129	240
2014	116	128	244
2015	150	131	281
2016	139	113	252
2017	146	122	268
2018	152	116	268
2019	132	128	260
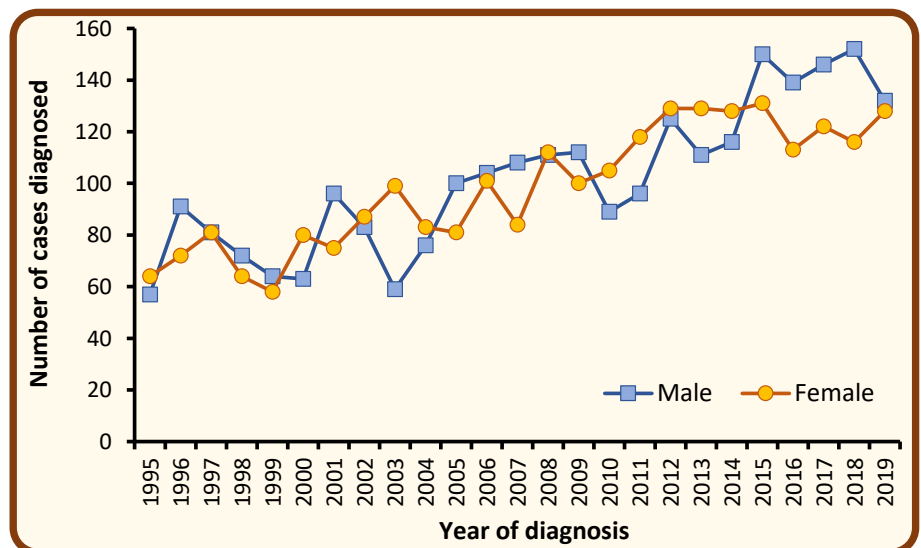
Note: Annual averages have been rounded to the nearest integer. Sums of numbers in table rows or columns may thus differ slightly from the given total.

NMSC: Non-melanoma skin cancer

Trends in age-standardised incidence rates - *Pancreatic cancer, Cases in 1995-2019*

▪ Among males age-standardised incidence rates of pancreatic cancer increased by 20.2% from 16.8 per 100,000 person years in 2010-2014 to 20.2 cases per 100,000 persons years in 2015-2019. This difference was statistically significant.

▪ Among females age-standardised incidence rates of pancreatic cancer decreased by 7.9% from 15.2 per 100,000 person years in 2010-2014 to 14.0 cases per 100,000 persons years in 2015-2019. This difference was not statistically significant.
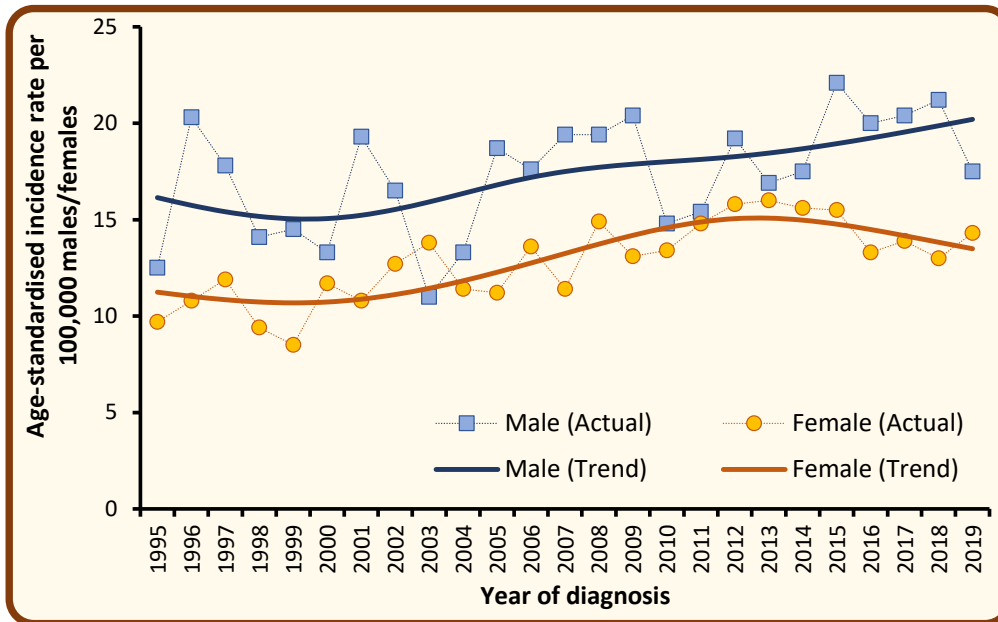
Age-standardised incidence rates illustrate the change in the number of cases within a population of a fixed size and age structure (2013 European Standard).

They thus represent changes other than those caused by population growth and/or ageing.

Trends can also be influenced by changes in how cancer is classified and coded. (e.g. the move from ICD-0-2 to ICD-0-3 in 2019).

Incidence by deprivation quintile - *Pancreatic cancer, Cases in 2015-2019*

The annual number of cases during 2015-2019 varied in each deprivation quintile due to variations in population size and age.

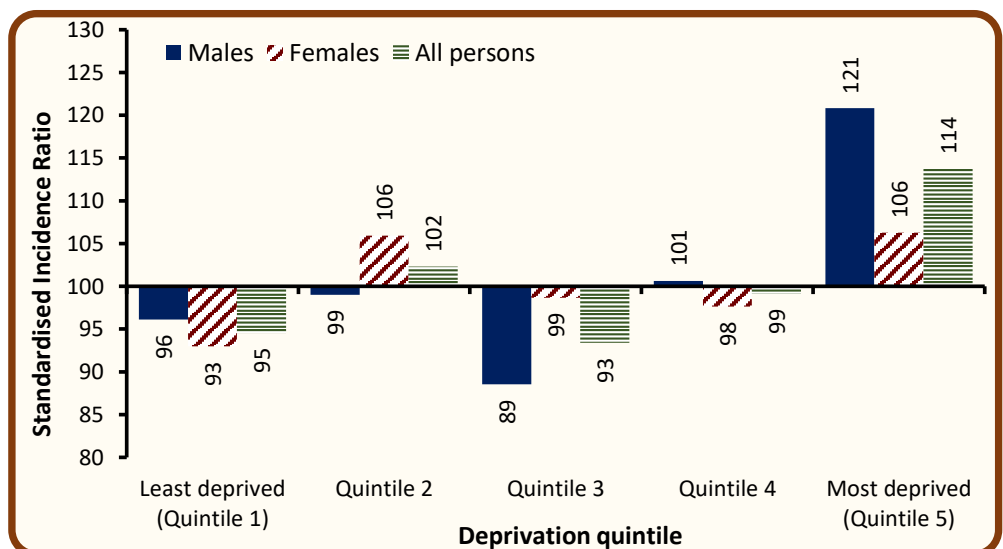After accounting for these factors, incidence rates:

▪ in the most socio-economically deprived areas did not vary significantly from the NI average.

▪ in the least socio-economically deprived areas did not vary significantly from the NI average.

Deprivation quintile	Average cases per year		
	Male	Female	Both sexes
Least deprived (Quintile 1)	29	25	54
Quintile 2	30	27	57
Quintile 3	27	25	52
Quintile 4	29	24	53
Most deprived (Quintile 5)	28	21	49
Northern Ireland	144	122	266

Standardised incidence ratios compare incidence rates in each deprivation quintile with the Northern Ireland incidence rate.

A value above 100 means that incidence rates in that deprivation quintile are greater than the Northern Ireland average.

This measure takes account of population size and age structure. Differences are thus not a result of these factors.

Incidence by Health and Social Care Trust (HSCT) - *Pancreatic cancer, Cases in 2015-2019*

The annual number of cases during 2015-2019 varied in each HSCT due to variations in population size and age.

After accounting for these factors, incidence rates:

▪ in Belfast HSCT did not vary significantly from the NI average.

▪ in Northern HSCT did not vary significantly from the NI average.

▪ in South-Eastern HSCT did not vary significantly from the NI average.

▪ in Southern HSCT did not vary significantly from the NI average.

▪ in Western HSCT did not vary significantly from the NI average.

Health and Social Care Trust	Average cases per year		
	Male	**Female**	**Both sexes**
Belfast HSCT	25	22	47
Northern HSCT	34	32	65
South-Eastern HSCT	32	27	60
Southern HSCT	29	21	50
Western HSCT	24	20	44
Northern Ireland	144	122	266
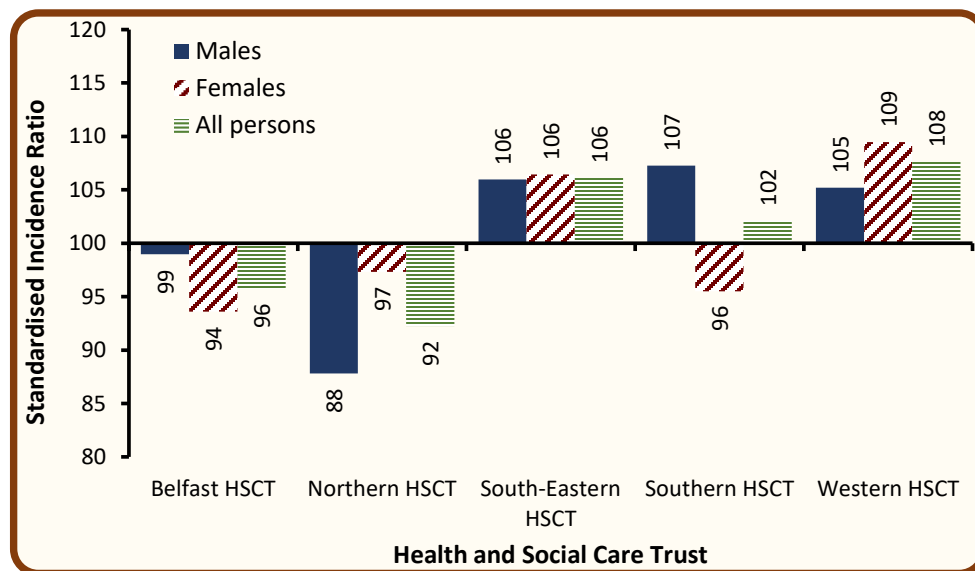
Standardised incidence ratios compare incidence rates in each HSC Trust with the Northern Ireland incidence rate. A value above 100 means that incidence rates in that HSC Trust are greater than the NI average.

This measure takes account of population size and age structure. Differences are thus not a result of these factors.

Data for Local Government Districts and Parliamentary Constituencies are available at www.qub.ac.uk/research-centres/nicr

Incidence by method of most recent admission to hospital - *Pancreatic cancer, Cases in 2015-2019*

During 2015-2019:

▪ 36.8% of cases had an emergency admission to hospital recorded up to 30 days prior to their cancer diagnosis.

▪ 36.6% of male cases had an emergency admission up to 30 days prior to diagnosis, compared to 37.0% of female cases.

▪ In 25.7% of diagnosed cases there was no record of a hospital inpatient admission up to 30 days prior to diagnosis.

Method of admission	Average cases per year		
	Male	**Female**	**Both sexes**
Emergency admission	53	45	98
Elective admission	57	43	100
No emergency/elective admission recorded	34	34	68
Total	144	122	266
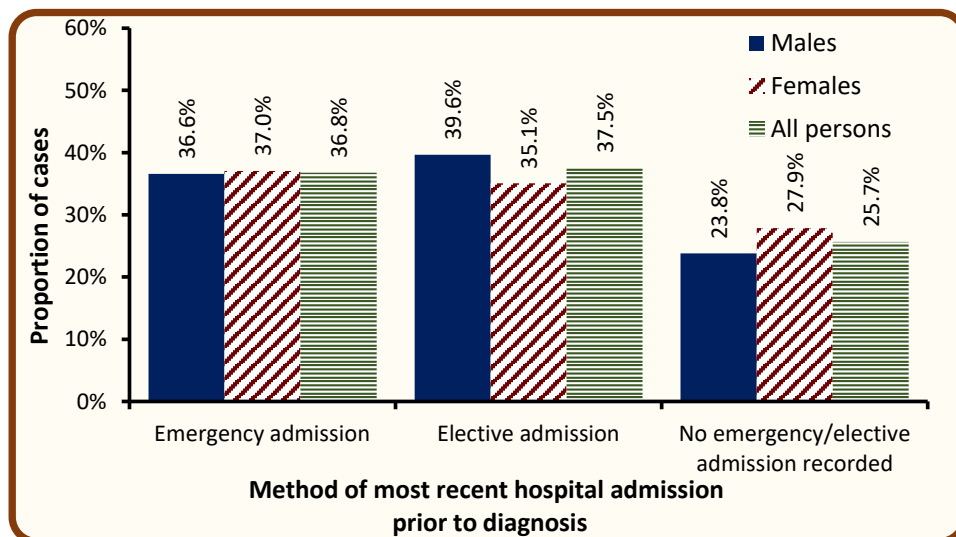
Admission method refers to the most recent hospital inpatient admission that a patient had prior to cancer diagnosis, regardless of reason for the admission.

Admissions are considered up to a maximum of 30 days prior to diagnosis. Admissions up to two days post diagnosis are also considered to allow for a reasonable margin or error in data recording.

The majority of patients with no inpatient admission recorded prior to diagnosis are likely to have been diagnosed via an outpatient route.

During 2015-2019:

▪ 87.4% of cases diagnosed had a stage assigned.

▪ 12.3% of cases were diagnosed at stage I. (14.1% of staged cases)

▪ 49.6% of cases were diagnosed at stage IV. (56.8% of staged cases)

▪ Among cases which were staged, 57.0% of male cases were diagnosed at stage IV, compared to 56.5% of female cases.

Stage at diagnosis	Average cases per year		
	Male	Female	Both sexes
Stage I (Early)	18	15	33
Stage II	19	18	37
Stage III	19	12	31
Stage IV (Late)	73	59	132
Unknown	16	17	34
All stages	144	122	266
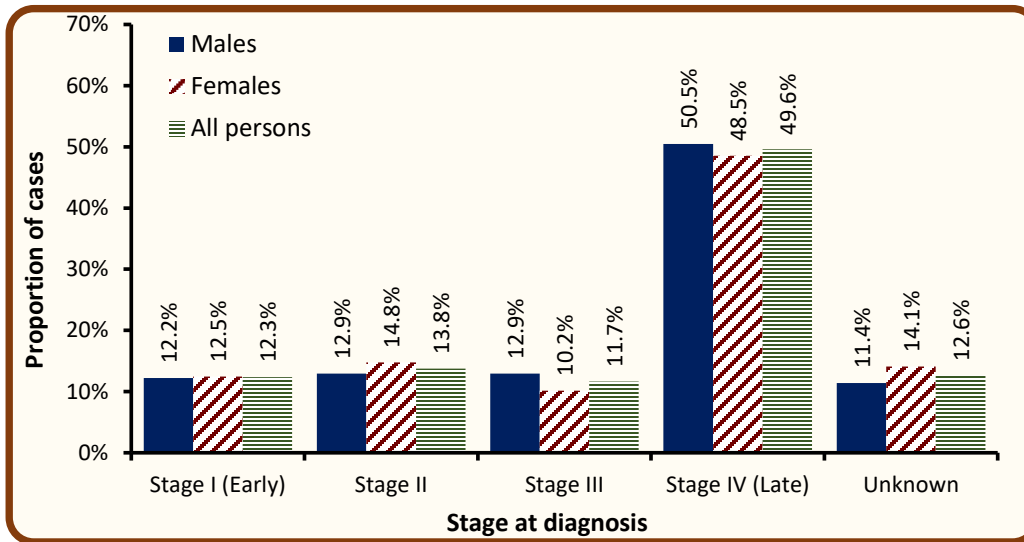
Cancer stage describes the size of a cancer and how far it has grown and spread.

This information is used to help decide what treatments are needed.

The classification used here to stage cancer is the TNM classification (Version 7 prior to 2018, Version 8 from 2018 onwards).
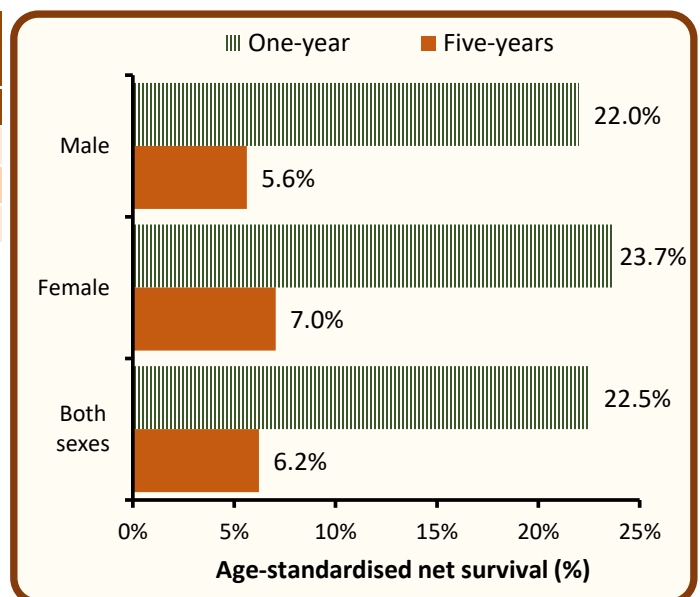
Survival

▪ 18.4% of patients were alive one year and 4.0% were alive five years from a pancreatic cancer diagnosis in 2010-2014. (observed survival)

▪ Age-standardised net survival (ASNS), which removes the effect of deaths from causes unrelated to cancer, was 22.5% one year and 6.2% five years from a pancreatic cancer diagnosis in 2010-2014.

▪ Five-year survival (ASNS) for pancreatic cancer patients diagnosed in 2010-2014 was 5.6% among men and 7.0% among women.

| Gender	Observed survival		Age-standardised net survival	
	One-year	Five-years	One-year	Five-years
Male	20.0%	4.0%	22.0%	5.6%
Female	16.9%	4.0%	23.7%	7.0%
Both sexes	18.4%	4.0%	22.5%	6.2%

Observed survival is the proportion of patients still alive one/five years after diagnosis. However, in this measure patients may have died from causes unrelated to their cancer.

Age-standardised net survival is the proportion of patients who would survive if the patient could not die from causes unrelated to their cancer. This measure is more typically used in studies of cancer survival.
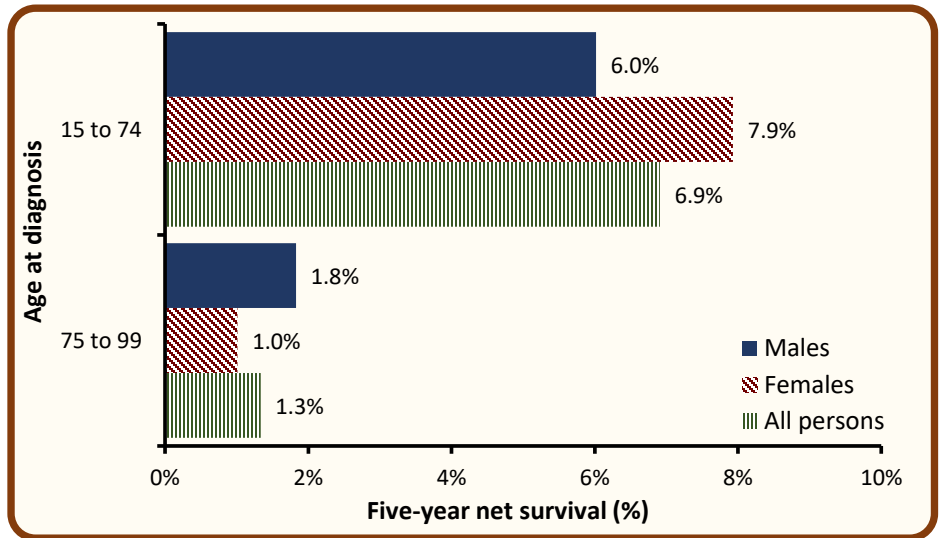
Trends in survival - *Pancreatic cancer, Patients diagnosed in 1995-2014*

▪ Among men five-year survival (ASNS) from pancreatic cancer increased from 5.2% in 2005-2009 to 5.6% in 2010-2014. This difference was not statistically significant.

▪ Among women five-year survival (ASNS) from pancreatic cancer increased from 5.0% in 2005-2009 to 7.0% in 2010-2014. This difference was not statistically significant.
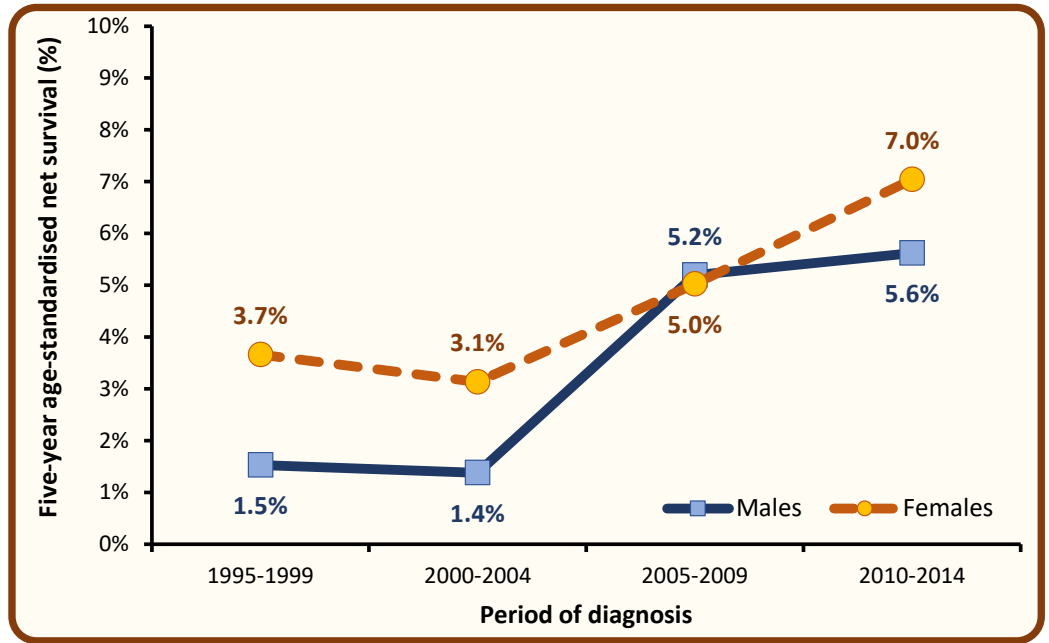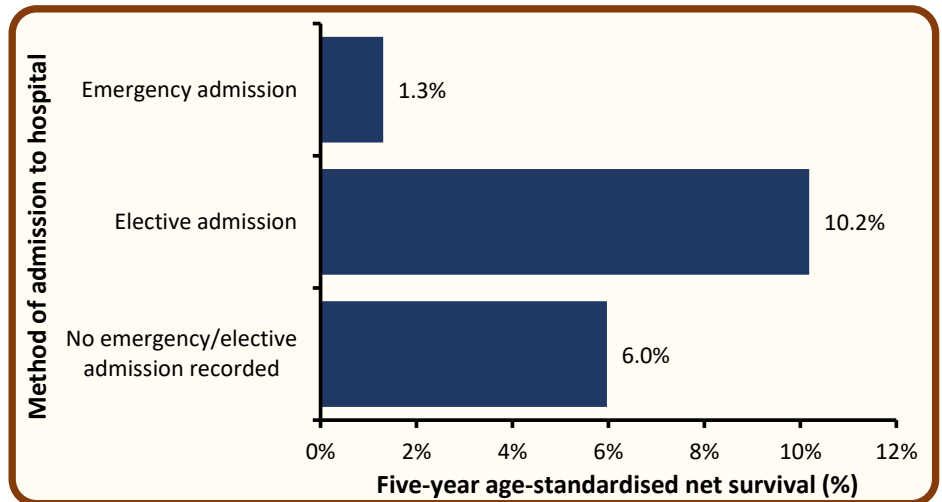

Survival by age at diagnosis - *Pancreatic cancer, Patients diagnosed in 2010-2014*

▪ Survival from pancreatic cancer among patients diagnosed in 2010-2014 was related to patient age with five-year survival higher among younger age groups. In particular:

▪ Five-year net survival ranged from 6.9% among patients aged 15 to 74 at diagnosis to 1.3% among those aged 75 and over.

▪ Five-year net survival among patients aged 75 and over was 1.8% for men and 1.0% for women.

## Survival by method of most recent admission to hospital - *Pancreatic cancer, Patients diagnosed in 2010-2014*

▪ Five-year survival (ASNS) among pancreatic cancer patients who had an emergency admission to hospital up to 30 days prior to their cancer diagnosis was 1.3% compared to 10.2% among those with elective admissions and 6.0% among those who had no hospital admissions recorded up to 30 days prior to diagnosis.

Survival by stage at diagnosis - *Pancreatic cancer, Patients diagnosed in 2012-2014*

▪ Stage at diagnosis is one of the most important factors in pancreatic cancer survival with five-year survival decreasing as stage increases.

▪ Five-year survival (ASNS) ranged from 30.7% for early stage (stage I/II) disease to 0.7% for late stage (stage III/IV) disease.

▪ Five-year survival (ASNS) for unstaged cancer was 10.2%.

Note: Staging information for pancreatic cancer is only available from 2012 onwards
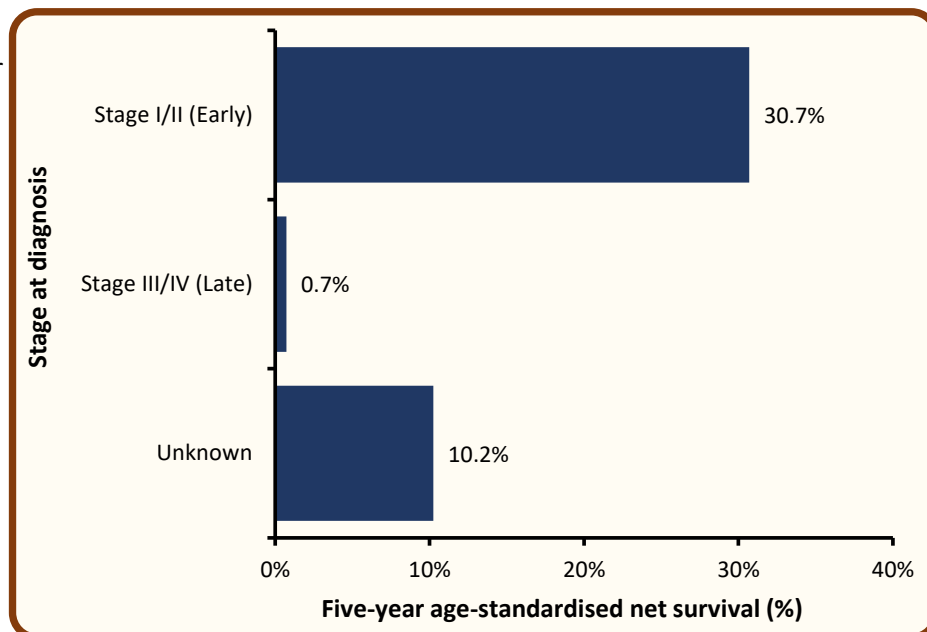
Prevalence

▪ At the end of 2019, there were 307 people (Males: 159; Females: 148) living with pancreatic cancer who had been diagnosed with the disease during 1995-2019.

▪ Of these, 51.8% were male, 30.0% were aged 75 and over, and 39.4% had been diagnosed in the previous year.

25-year prevalence refers to the number of cancer survivors who were alive at the end of 2019, and had been diagnosed with their cancer in the previous 25 years (i.e. 1995-2019).

Time since diagnosis	25-year prevalence								
	Aged 0-74			Aged 75+			All ages		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
0-1 year	41	48	89	13	19	32	54	67	121
1-5 years	50	32	82	20	11	31	70	43	113
5-25 years	22	22	44	13	16	29	35	38	73
0-25 years	113	102	215	46	46	92	159	148	307

Trends in 10-year prevalence - *Pancreatic cancer, Patients alive at end of each year from 2010-2019*

▪ Among males the number of survivors from pancreatic cancer who had been diagnosed within the previous ten years increased by 36.5% from 104 survivors in 2014 to 142 survivors in 2019.

▪ Among females the number of survivors from pancreatic cancer who had been diagnosed within the previous ten years increased by 28.7% from 101 survivors in 2014 to 130 survivors in 2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	72	79	97	84	104	125	128	131	149	142
Female	67	79	76	85	101	117	110	107	109	130
Both sexes	139	158	173	169	205	242	238	238	258	272

Mortality

▪ During 2015-2019 there were 127 male and 118 female deaths from pancreatic cancer each year.

▪ Pancreatic cancer made up 5.5% of all male, and 5.6% of all female cancer deaths (ex NMSC).

Deaths by age at death - *Pancreatic cancer, Deaths in 2015-2019*

▪ The median age at death during 2015-2019 was 73 for men and 76 for women.

▪ Risk of death from pancreatic cancer was strongly related to patient age, with 44.9% of men and 54.2% of women aged 75 years or more at time of death.

▪ 6.1% of pancreatic cancer deaths occurred among those aged under 55.

| Age at death	Average deaths per year		
	Male	Female	Both sexes
0 - 54	8	6	15
55 - 64	22	13	34
65 - 74	40	34	74
75 +	57	64	122
All ages	127	118	245

Deaths by year of death - *Pancreatic cancer, Deaths in 2010-2019*

▪ Among males the number of deaths from pancreatic cancer increased by 29.6% from an annual average of 98 deaths in 2010-2014 to 127 deaths in 2015-2019.

▪ Among females the number of deaths from pancreatic cancer increased by 0.9% from an annual average of 117 deaths in 2010-2014 to 118 deaths in 2015-2019.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Male	89	84	103	114	101	118	134	139	124	122
Female	99	113	141	123	107	112	121	127	118	112
Both sexes	188	197	244	237	208	230	255	266	242	234

Trends in age-standardised mortality rates - *Pancreatic cancer, Deaths in 1995-2019*

▪ Among males age-standardised mortality rates from pancreatic cancer increased by 16.0% between 2010-2014 and 2015-2019 from 15.6 to 18.1 deaths per 100,000 persons years. This difference was not statistically significant.

▪ Among females age-standardised mortality rates from pancreatic cancer decreased by 6.2% between 2010-2014 and 2015-2019 from 14.4 to 13.5 deaths per 100,000 persons years. This difference was not statistically significant.
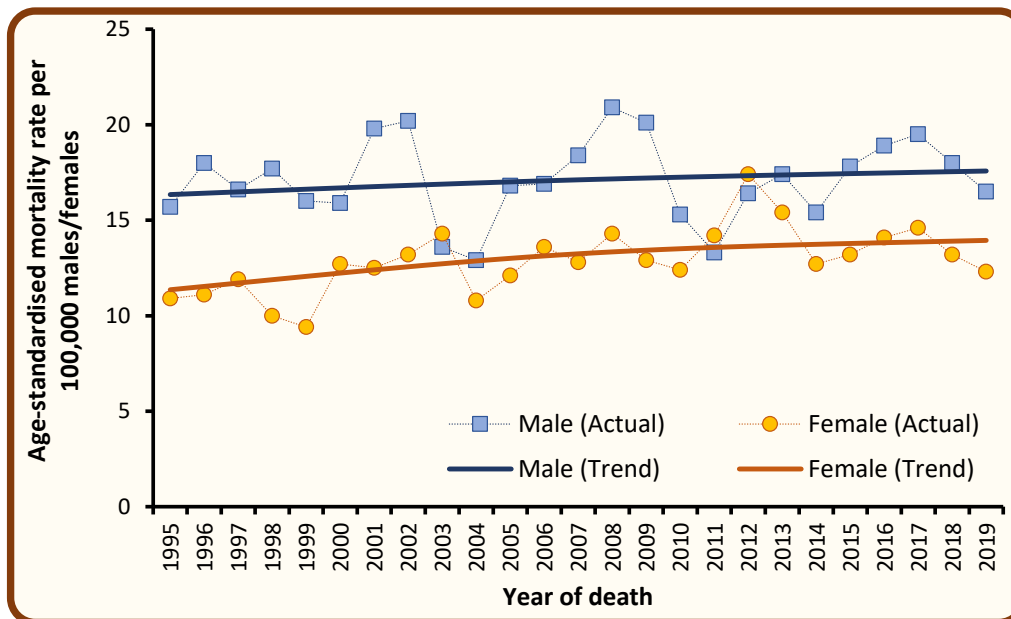
Mortality data are provided by the Northern Ireland General Registrar Office via the Department of Health.

Counts of the number of deaths are based upon the year that death occurred, and upon the primary cause of death only.

Age-standardised mortality rates remove changes over time caused by population growth and/or ageing.

Background notes

Cancer classification: Classification of tumour sites is carried out using ICD10 codes. For a listing and explanation of ICD10 codes see: World Health Organisation at http://apps.who.int/classifications/icd10/browse/2010/en#/II

Population data for Northern Ireland, and smaller geographic areas, are extracted from the NI mid-year population estimates available from the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Geographic areas are assigned based on a patient's postcode of usual residence at diagnosis using the Jan 2021 Central Postcode Directory (CPD) produced by the NI Statistics and Research Agency (available at www.nisra.gov.uk).

Deprivation quintiles: Super output areas (SOA) are assigned to each patient based on their postcode of usual residence at diagnosis. Using the SOA each patient is assigned a socio-economic deprivation quintile based on the 2017 Multiple Deprivation Measure. The 2017 Multiple Deprivation Measure is available from the NI Statistics and Research Agency (available at www.nisra.gov.uk).

A **crude incidence/mortality rate** is the number of cases/deaths per 100,000 person years in the population. Person years are the sum of the population over the number of years included.

An **age-standardised incidence/mortality rate** per 100,000 person years is an estimate of the incidence/mortality rate if that population had a standard age structure. Throughout this report the 2013 European Standard Population has been used. Standardising to a common Standard Population allows comparisons of incidence/mortality rates to be made between different time periods and geographic areas while removing the effects of population change and ageing.

A **Standardised Incidence/Mortality Ratio (SIR/SMR)** is the ratio of the number of cases/deaths observed in a population to the expected number of cases/deaths, based upon the age-specific rates in a reference population. This statistic is often used to compare incidence/mortality rates for geographic areas (e.g. Trusts) to the national incidence/mortality rates (i.e. Northern Ireland). An SIR/SMR of 100 indicates there is no difference between the geographic area and the national average.

Confidence intervals are a measure of the precision of a statistic (e.g. colorectal cancer incidence rate). Typically, when numbers are low, precision is poorer and confidence intervals will be wider. As a general rule, when comparing statistics (e.g. cervical cancer incidence rate in year 2012 vs year 2013), if the confidence interval around one statistic overlaps with the interval around another, it is unlikely that there is any real difference between the two. If there is no overlap, the difference is considered to be **statistically significant**.

Lifetime risk is estimated as the cumulative risk of getting cancer up to age 75/85, calculated directly from the age-specific incidence rates. The odds of developing the disease before age 75/85 is the inverse of the cumulative risk.

Prevalence is the number of cancer patients who are alive in the population on a specific date (31st December 2019 in this report). Since data from the NI Cancer Registry are only available since 1993, prevalence only refers to a fixed term (10 and 25 years in this report). There may be members of the population living with a diagnosis of cancer for more than 25 years.

Observed survival refers to the proportion of patients who survive a specified amount of time from their date of diagnosis. Observed survival considers death from any cause and is not adjusted for the age of the patient. Cause of death may be unrelated to the cancer the patient has been diagnosed with.

Net Survival is an estimate of survival where the effect on survival of background population mortality rates has been removed. It represents the [theoretical] survival of cancer patients if they could only die from cancer-related causes. Age-standardised net survival estimates are the estimates that would occur if that population of cancer patients had a standard population age structure. The age groups and weights used here are those used by international studies such as EUROCARE, an international study group that compares cancer survival among European countries. However, due to the small number of patients in NI, the first two age categories in the standard population are combined.

Mortality: Information relating to cancer mortality is sourced from the General Registrar Office (GRONI) via the Department of Health (NI). Results are based upon the date on which death occurs, and may thus differ slightly than those produced by the Northern Ireland Statistics and Research Agency (NISRA), which produces deaths data based upon the date on which the death is registered with GRONI.